

AMENDMENTS TO THE CLAIMS

The following is a complete, marked-up listing of revised claims with a status identifier in parenthesis, underlined text indicating insertions, and strike through and/or double-bracketed text indicating deletions.

LISTING OF CLAIMS

1. (Currently Amended) A recording medium storing an executable data structure for managing reproduction by a reproduction apparatus of video data having multiple reproduction paths ~~recorded on the recording medium~~, comprising:

one or more management files for managing reproduction of the video data by the reproducing apparatus, the management file being separate from a clip file storing the video data, each clip file being associated with ~~each one of the one or more~~ management files, each clip file of the multiple reproduction paths being associated with one of the multiple reproduction paths, the management file storing at least one entry point map associated with one of the multiple reproduction paths, each entry point map ~~for~~ identifying a plurality of entry points in the video data for the associated reproduction path, the entry point map mapping ~~a data packet~~ an address of an entry point in the video data to a presentation time stamp of the entry point,

wherein the entry point map includes path change information for managing changing of reproduction paths by the reproducing apparatus,

the path change information having a plurality of fields, each field associated with at least one of the plurality of entry points, and

the path change information includes a field for identifying whether changing reproduction paths is permitted or not in relation to the associated entry point and another field for identifying where changing reproduction path is permitted in relation to the associated entry point, the another field identifying an entry point in a current

reproduction path where changing reproduction paths is permitted if the field identifies that changing reproduction paths is permitted.

2. (Cancelled)

3. (Currently Amended) The recording medium of claim 1, wherein the fields for permitting a change in a same associated reproduction path define one or more units of video data and wherein the field is usable for reproducing the video data seamlessly.

4. (Previously Presented) The recording medium of claim 3, further comprising:
the clip file having the video data recorded therein, and at least a portion of the video data being multiplexed on a unit of video data basis.

5. (Previously Presented) The recording medium of claim 1, wherein the multiple reproduction paths of video data are different camera angles of video data.

6. (Previously Presented) The recording medium of claim 3, wherein each unit of video data starts with an I-picture.

7. (Previously Presented) The recording medium of claim 3, wherein each unit of video data starts with a closed group of pictures (GOP).

8-14. (Cancelled)

15. (Previously Presented) The recording medium of claim 1, wherein the entry point maps are aligned in time.

16. (Cancelled)

17. (Previously Presented) The recording medium of claim 1, wherein if the field indicates that changing reproduction paths is permitted in relation to the associated entry point, the another field associated with the entry point indicates a start position of a data packet of the video data.

18. (Currently Amended) A method of recording a data structure for managing reproduction of video data having multiple reproduction paths on a recording medium, comprising:

recording at least one entry point map associated with one of the multiple reproduction paths in one or more management files of the recording medium, each entry point map ~~for~~ identifying a plurality of entry points in the video data for the associated reproduction path, the entry point map mapping ~~a data packet~~ an address of an entry point in the video data to a presentation time stamp of the entry point, the management file being separate from a clip file for storing the video data, each clip file being associated with ~~each~~ one of the ~~one or more~~ management files, each clip file of the multiple reproduction paths being associated with one of the multiple reproduction paths,

wherein the entry point map includes path change information having a plurality of fields, each field associated with at least one of the plurality of entry points, and the path change information includes a field for identifying whether changing reproduction paths is permitted or not in relation to the associated entry point, and another field for identifying where changing reproduction paths is permitted in relation to the associated entry point, the another field identifying an entry point in

a current reproduction path where changing reproduction paths is permitted if the field identifies that changing reproduction paths is permitted.

19. (Currently Amended) A method of reproducing a data structure for managing reproduction of video data having multiple reproduction paths recorded on a recording medium, comprising:

reproducing management information from one or more management files of the recording medium, the management information including at least one entry point map associated with one of the multiple reproduction paths, each entry point map for identifying a plurality of entry points in the video data for the associated reproduction path, the entry point map mapping ~~data packet~~ an address of an entry point in the video data to a presentation time stamp of the entry point, the management file being separate from a clip file for storing the video data, each clip file being associated with each one of the one or more management files, each clip file of the multiple reproduction paths being associated with one of the multiple reproduction paths,

wherein the entry point map includes path change information having a plurality of fields, each field associated with at least one of the plurality of entry points, and

the path change information includes a field for identifying whether changing reproduction paths is permitted or not in relation to the associated entry point, and another field for identifying where changing reproduction paths is permitted in relation to the associated entry point, the another field identifying an entry point in a current reproduction path where changing reproduction paths is permitted if the field identifies that changing reproduction paths is permitted; and

reproducing the video data based on the management information,

wherein the reproducing step further including changing a reproduction path from [[a]]
the current reproduction path to a requested reproduction path based on the path
change information if the changing reproduction path is permitted.

20. (Currently Amended) An apparatus for recording a data structure for managing
reproduction of video data having multiple reproduction paths on a recording medium,
comprising:

a recording unit configured to record data on the recording medium; and
a controller, operably coupled to the recording unit, configured to control the
recording unit to record the video data having multiple reproduction paths on the
recording medium, the controller configured to control the recording unit to record at
least one entry point map associated with one of the multiple reproduction paths in
one or more management files of the recording medium, each entry point map ~~for~~
identifying a plurality of entry points in the video data for the associated reproduction
path, the entry point map mapping ~~a data packet~~ an address of an entry point in the
video data to a presentation time stamp of the entry point, the management file being
separate from a clip file storing the video data, each clip file being associated with one
of the one or more ~~each~~ management files, each clip file of the multiple reproduction
paths being associated with one of the multiple reproduction paths; and

wherein the entry point map includes path change information having a
plurality of fields, each field associated with at least one of the plurality of entry
points, and

the path change information includes a field for identifying whether changing
reproduction paths is permitted or not in relation to the associated entry point, and
another field for identifying where changing reproduction paths is permitted in relation
to the associated entry point, the another field identifying an entry point in a current

reproduction path where changing reproduction paths is permitted if the field identifies that changing reproduction paths is permitted.

21. (Currently Amended) An apparatus for reproducing a data structure for managing reproduction of video data having multiple reproduction paths recorded on a recording medium, comprising:

a reproducing unit configured to reproduce data recorded on the recording medium;

a controller, operably coupled to the reproducing unit, configured to control the reproducing unit to read an entry point map associated with one of the multiple reproduction paths from one or more management files of the recording medium, each entry point map ~~for~~ identifying a plurality of entry points in the video data for the associated reproduction path, the entry point map mapping a ~~data packet~~ an address of an entry point in the video data to a presentation time stamp of the entry point, the management file being separate from a clip file storing the video data, each clip file being associated with ~~each~~ one of the one or more management files, each clip file of the multiple reproduction paths being associated with one of the multiple reproduction paths,

wherein the entry point map includes path change information having a plurality of fields, each field associated with at least one of the plurality of entry points, and

the path change information includes a field for identifying whether changing reproduction paths is permitted or not in relation to the associated entry point, and another field for identifying where changing reproduction paths is permitted in relation to the associated entry point, the another field identifying an entry point in a current

reproduction path where changing reproduction paths is permitted if the field identifies that changing reproduction paths is permitted; and

the controller configured to control the reproducing unit to reproduce the video data based on the one or more management files, wherein the controller is further configured to control the reproducing unit to reproduce a requested reproduction path based on the path change information if the changing reproduction path from ~~a-~~the current reproduction path to the requested reproduction path is permitted.

22. (Currently Amended) The method of claim 18, wherein the fields for permitting a change in a same associated reproduction path define one or more units of video data and wherein the field is usable for reproducing the video data seamlessly.

23. (Previously Presented) The method of claim 22, wherein at least a portion of the video data is recorded in a clip file with being multiplexed on a unit of video data basis.

24. (Previously Presented) The method of claim 18, wherein the multiple reproduction paths of video data are different camera angles of video data.

25-26. (Cancelled)

27. (Previously Presented) The method of claim 19, wherein the multiple reproduction paths of video data are different camera angles of video data.

28. (Currently Amended) The apparatus of claim 20, wherein the fields for permitting a change in a same associated reproduction path define one or more units of video data, and wherein the field is usable for reproducing the video data seamlessly.

29. (Previously Presented) The apparatus of claim 20, wherein if the field indicates that changing reproduction paths is permitted in relation to the associated entry point, the another field associated with the entry point indicates a start position of a data packet of the video data.

30. (Previously Presented) The apparatus of claim 21, wherein the reproducing unit includes an optical pickup to reproduce the video data.

31. (Currently Amended) The apparatus of claim 21, wherein the another field associated with the entry point indicates a start position of a unit associated with the entry point, wherein the field is usable for reproducing the video data seamlessly.

32. (Previously Presented) The recording medium of claim 1, wherein each clip file is associated with each entry point map.

33-37. (Cancelled)

38. (Previously Presented) The method of claim 19, wherein the current reproduction path is maintained until a position at which exiting the current reproduction path is permitted.

39. (Cancelled)

40. (Previously Presented) The apparatus of claim 20, wherein the recording unit includes an optical pickup to record the video data.

41. (Cancelled)

42. (Previously Presented) The apparatus of claim 21, wherein the current reproduction path is maintained until a position at which exiting the current reproduction path is permitted.

43. (Previously Presented) The apparatus of claim 20, further comprising:
an encoder configured to encode the video data having multiple reproduction paths,
wherein the controller is configured to control the recording unit to record the encoded video data.

44. (Previously Presented) The recording medium of claim 1, further comprising:
at least one playlist file, the playlist file including at least one playitem, the playitem identifying a playing interval in a reproduction path of the video data, the playitem indicating at least one management file for an associated reproduction path used by the corresponding playitem.

45. (Previously Presented) The method of claim 18, further comprising:
recording playlist files, the playlist file including at least one playitem, the playitem identifying a playing interval in a reproduction path of the video data, the

playitem indicating at least one management file for an associated reproduction path used by the corresponding playitem.

46. (Previously Presented) The method of claim 19, further comprising:

reproducing playlist files, the playlist file including at least one playitem, the playitem identifying a playing interval in a reproduction path of the video data, the playitem indicating at least one management file for an associated reproduction path used by the corresponding playitem.

47. (Previously Presented) The apparatus of claim 20, wherein the controller is configured to control the recording unit to record playlist files, the playlist file including at least one playitem, the playitem identifying a playing interval in a reproduction path of the video data, the playitem indicating at least one management file for an associated reproduction path used by the corresponding playitem.

48. (Previously Presented) The apparatus of claim 21, wherein the controller is configured to read playlist files, the playlist file including at least one playitem, the playitem identifying a playing interval in a reproduction path of the video data, the playitem indicating at least one management file for an associated reproduction path used by the corresponding playitem.